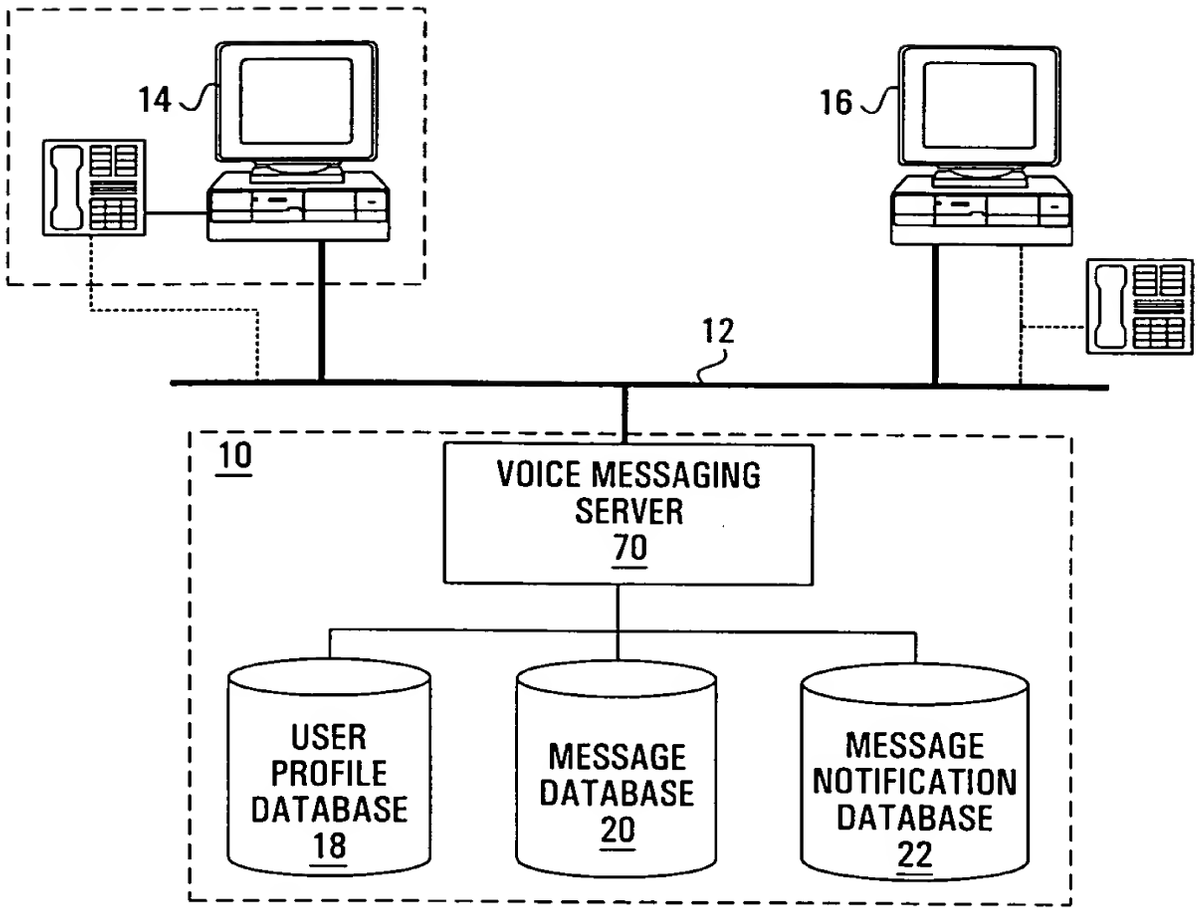
14
16
12
10
VOICE MESSAGING SERVER 70
USER PROFILE DATABASE 18
MESSAGE DATABASE 20
MESSAGE NOTIFICATION DATABASE 22

FIG. 1

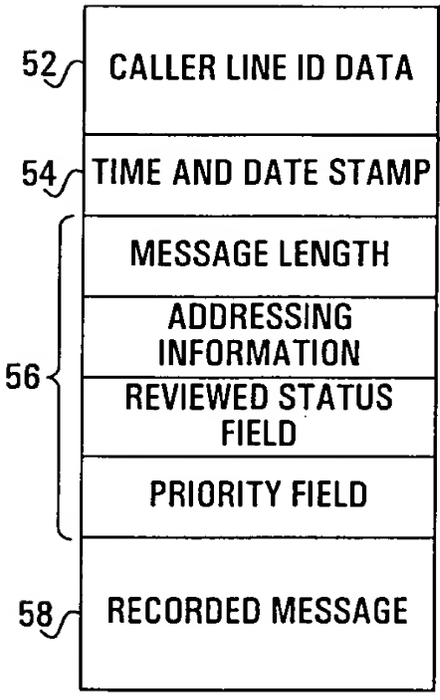

FIG. 3

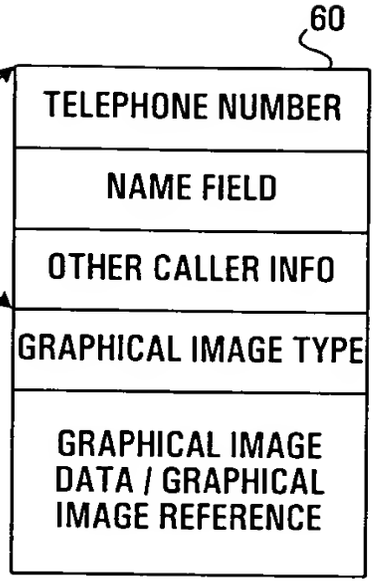

FIG. 4

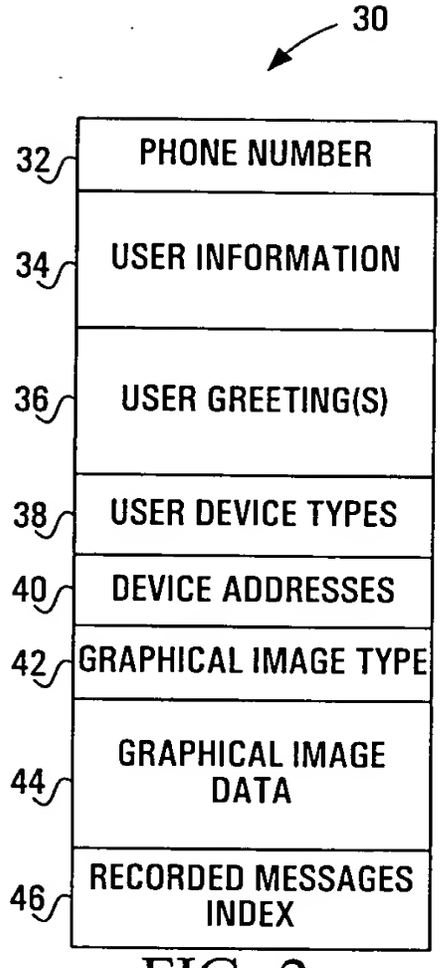

FIG. 2

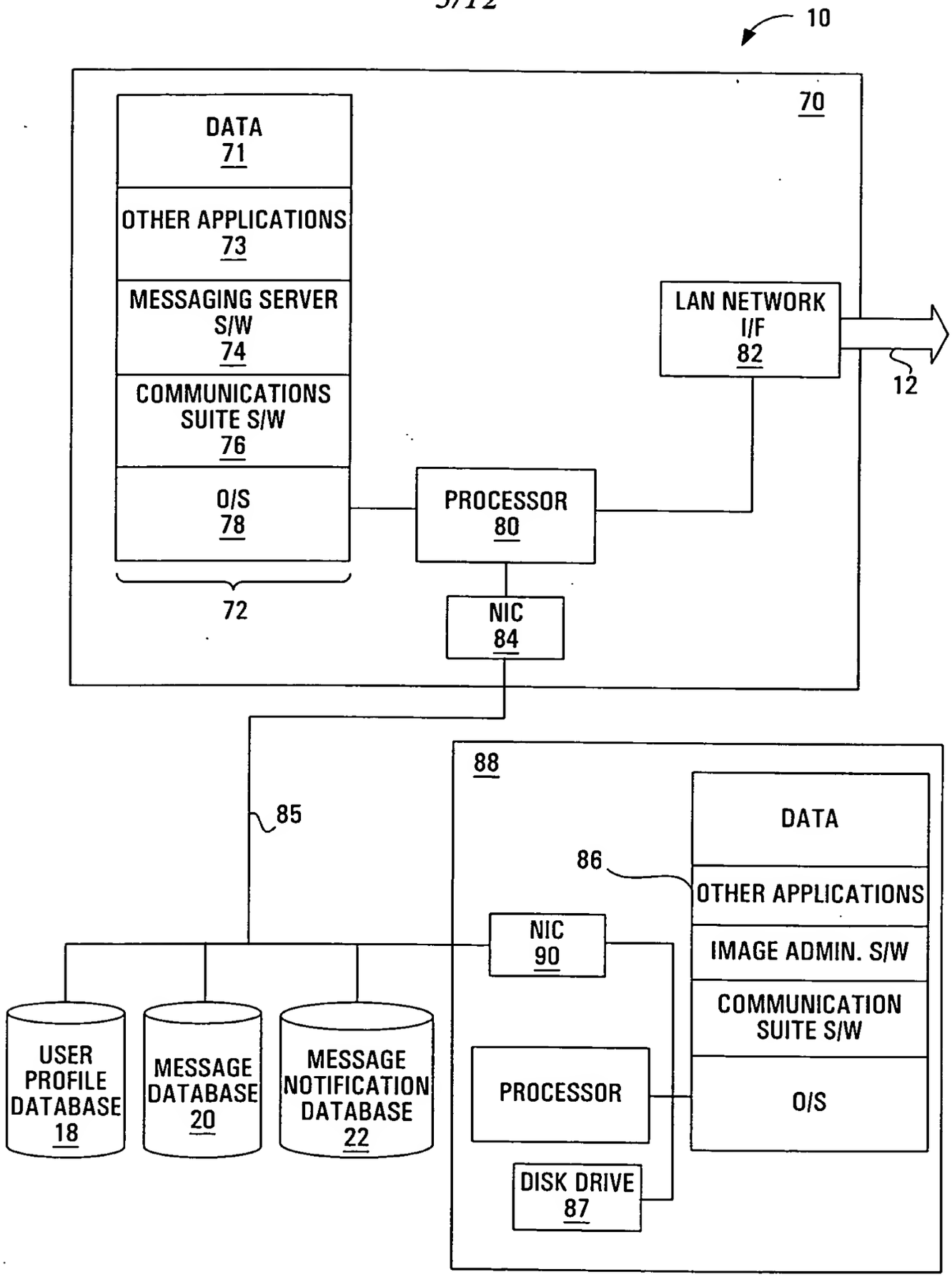
10
70
DATA
71
OTHER APPLICATIONS
73
MESSAGING SERVER
S/W
74
COMMUNICATIONS
SUITE S/W
76
O/S
78
72
PROCESSOR
80
NIC
84
LAN NETWORK
I/F
82
12
85
88
DATA
86
OTHER APPLICATIONS
IMAGE ADMIN. S/W
COMMUNICATION
SUITE S/W
O/S
NIC
90
PROCESSOR
DISK DRIVE
87
USER
PROFILE
DATABASE
18
MESSAGE
DATABASE
20
MESSAGE
NOTIFICATION
DATABASE
22

FIG. 5

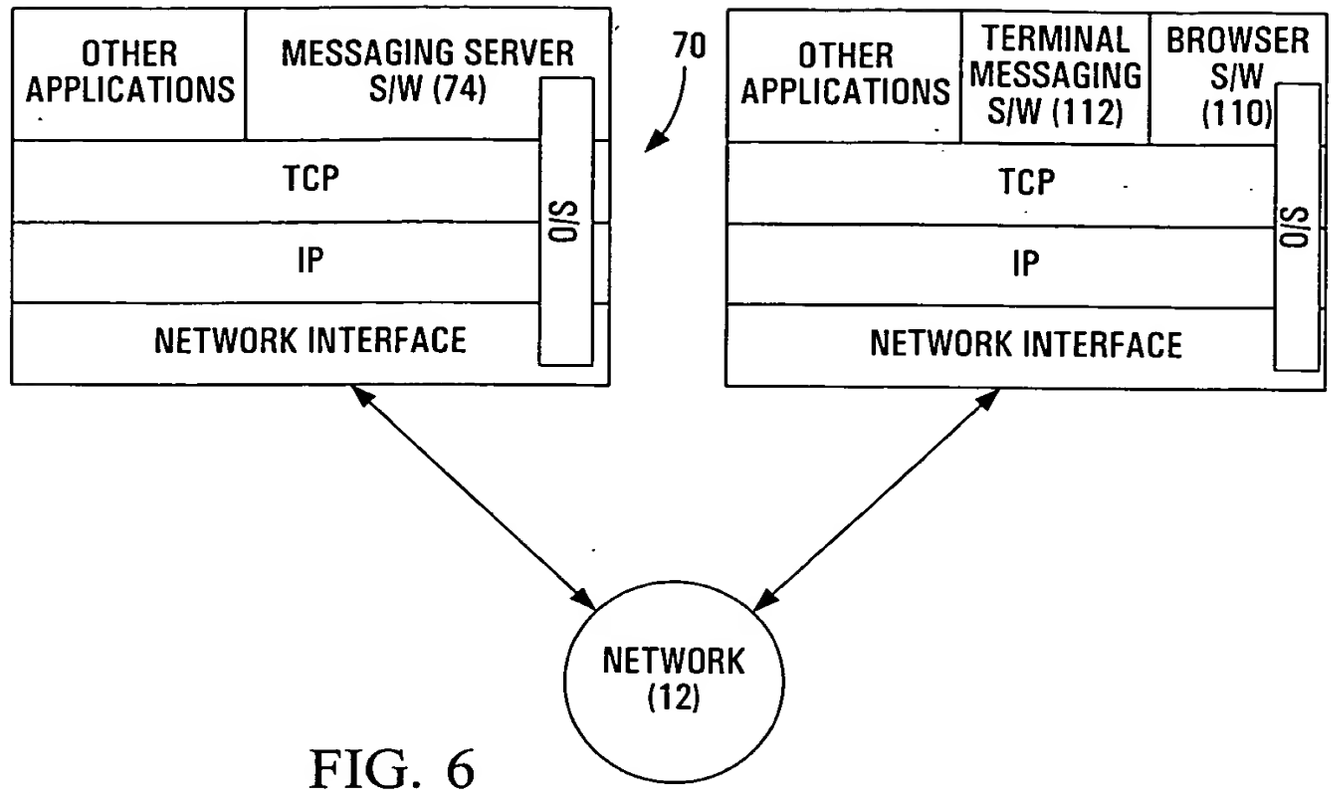
OTHER APPLICATIONS
MESSAGING SERVER S/W (74)
TCP
IP
NETWORK INTERFACE
O/S
70
OTHER APPLICATIONS
TERMINAL MESSAGING S/W (112)
BROWSER S/W (110)
TCP
IP
NETWORK INTERFACE
O/S
NETWORK (12)

FIG. 6

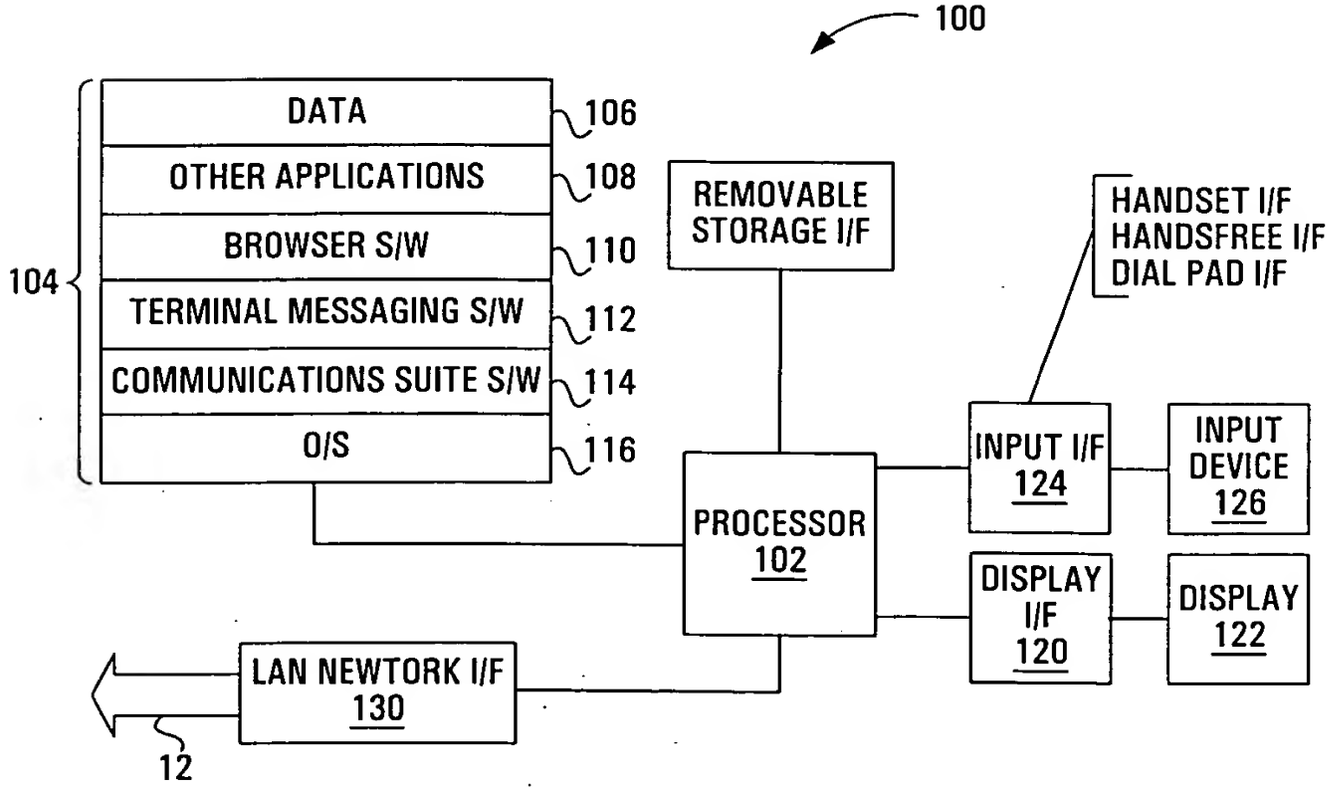
100
104
DATA
106
OTHER APPLICATIONS
108
BROWSER S/W
110
TERMINAL MESSAGING S/W
112
COMMUNICATIONS SUITE S/W
114
O/S
116
REMOVABLE STORAGE I/F
HANDSET I/F
HANDSFREE I/F
DIAL PAD I/F
INPUT I/F 124
INPUT DEVICE 126
PROCESSOR 102
DISPLAY I/F 120
DISPLAY 122
LAN NEWTORK I/F 130
12

FIG. 7

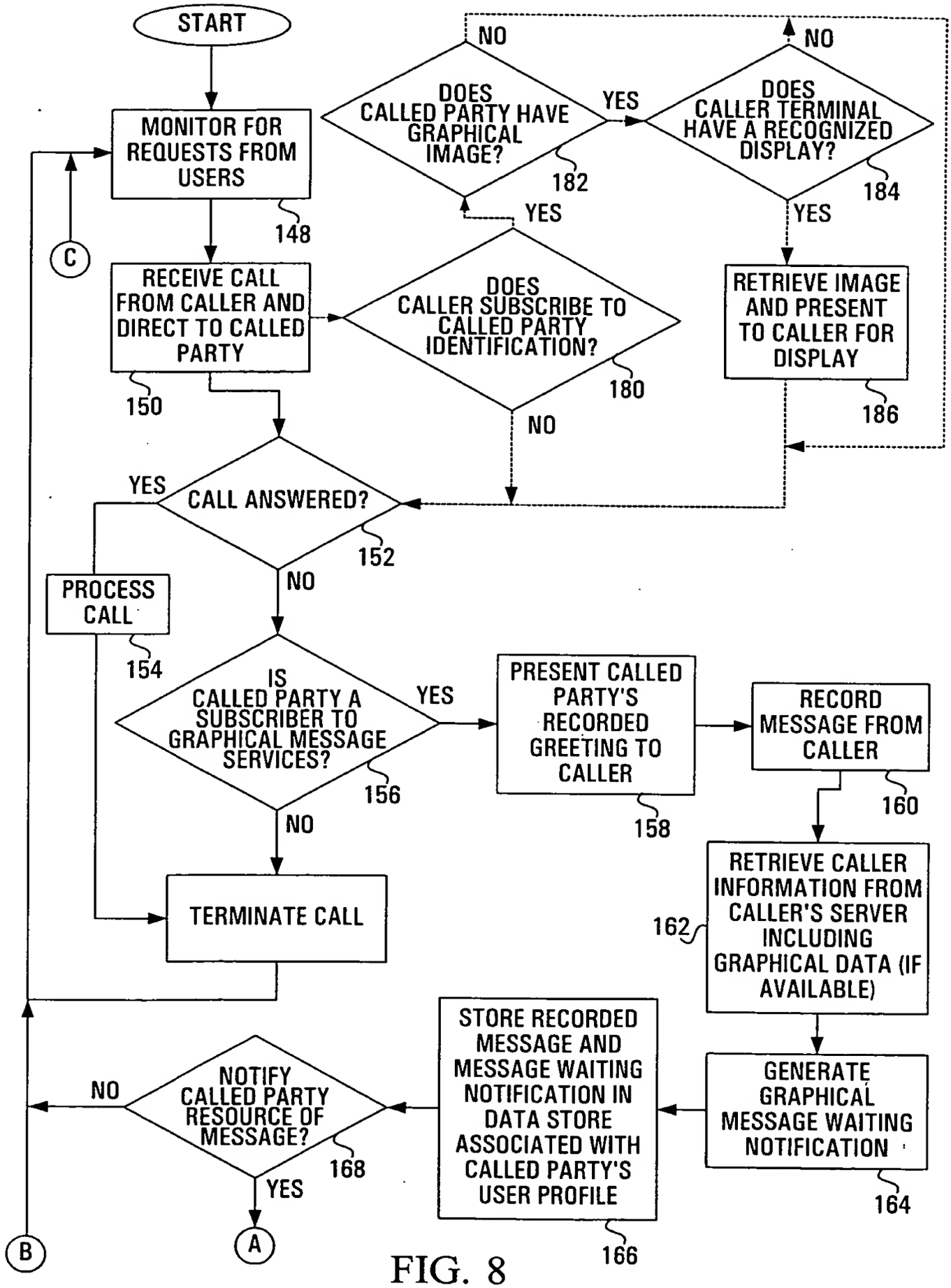
START
MONITOR FOR REQUESTS FROM USERS
148
RECEIVE CALL FROM CALLER AND DIRECT TO CALLED PARTY
150
DOES CALLED PARTY HAVE GRAPHICAL IMAGE?
182
NO
YES
DOES CALLER TERMINAL HAVE A RECOGNIZED DISPLAY?
184
NO
YES
RETRIEVE IMAGE AND PRESENT TO CALLER FOR DISPLAY
186
DOES CALLER SUBSCRIBE TO CALLED PARTY IDENTIFICATION?
180
NO
CALL ANSWERED?
152
YES
NO
PROCESS CALL
154
IS CALLED PARTY A SUBSCRIBER TO GRAPHICAL MESSAGE SERVICES?
156
YES
NO
PRESENT CALLED PARTY'S RECORDED GREETING TO CALLER
158
RECORD MESSAGE FROM CALLER
160
RETRIEVE CALLER INFORMATION FROM CALLER'S SERVER INCLUDING GRAPHICAL DATA (IF AVAILABLE)
162
GENERATE GRAPHICAL MESSAGE WAITING NOTIFICATION
164
STORE RECORDED MESSAGE AND MESSAGE WAITING NOTIFICATION IN DATA STORE ASSOCIATED WITH CALLED PARTY'S USER PROFILE
166
NOTIFY CALLED PARTY RESOURCE OF MESSAGE?
168
NO
YES
TERMINATE CALL
A
B
C

FIG. 8

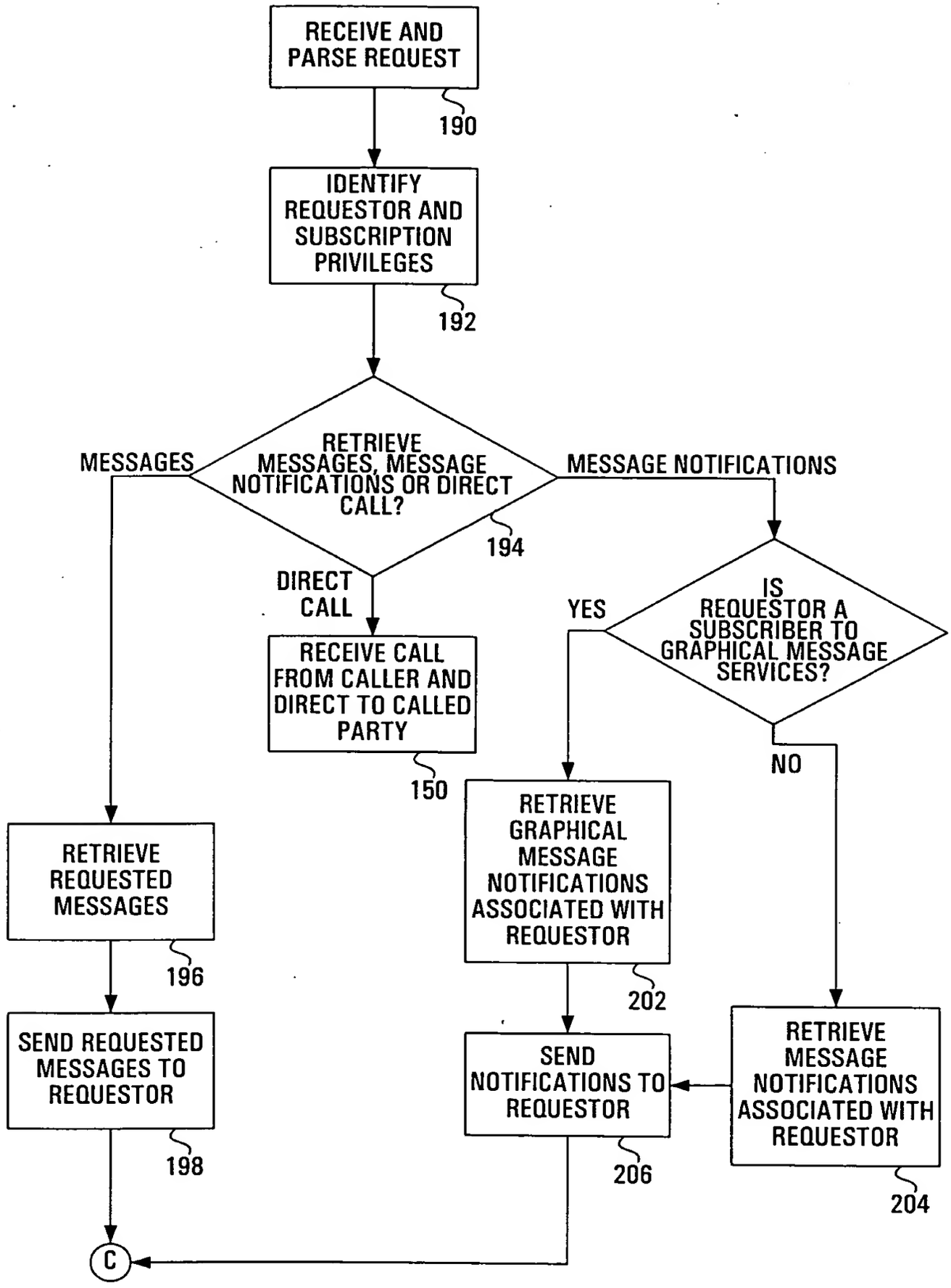
RECEIVE AND PARSE REQUEST
190
IDENTIFY REQUESTOR AND SUBSCRIPTION PRIVILEGES
192
RETRIEVE MESSAGES, MESSAGE NOTIFICATIONS OR DIRECT CALL?
194
MESSAGES
DIRECT CALL
MESSAGE NOTIFICATIONS
RECEIVE CALL FROM CALLER AND DIRECT TO CALLED PARTY
150
IS REQUESTOR A SUBSCRIBER TO GRAPHICAL MESSAGE SERVICES?
YES
NO
RETRIEVE REQUESTED MESSAGES
196
SEND REQUESTED MESSAGES TO REQUESTOR
198
RETRIEVE GRAPHICAL MESSAGE NOTIFICATIONS ASSOCIATED WITH REQUESTOR
202
SEND NOTIFICATIONS TO REQUESTOR
206
RETRIEVE MESSAGE NOTIFICATIONS ASSOCIATED WITH REQUESTOR
204
C

FIG. 9

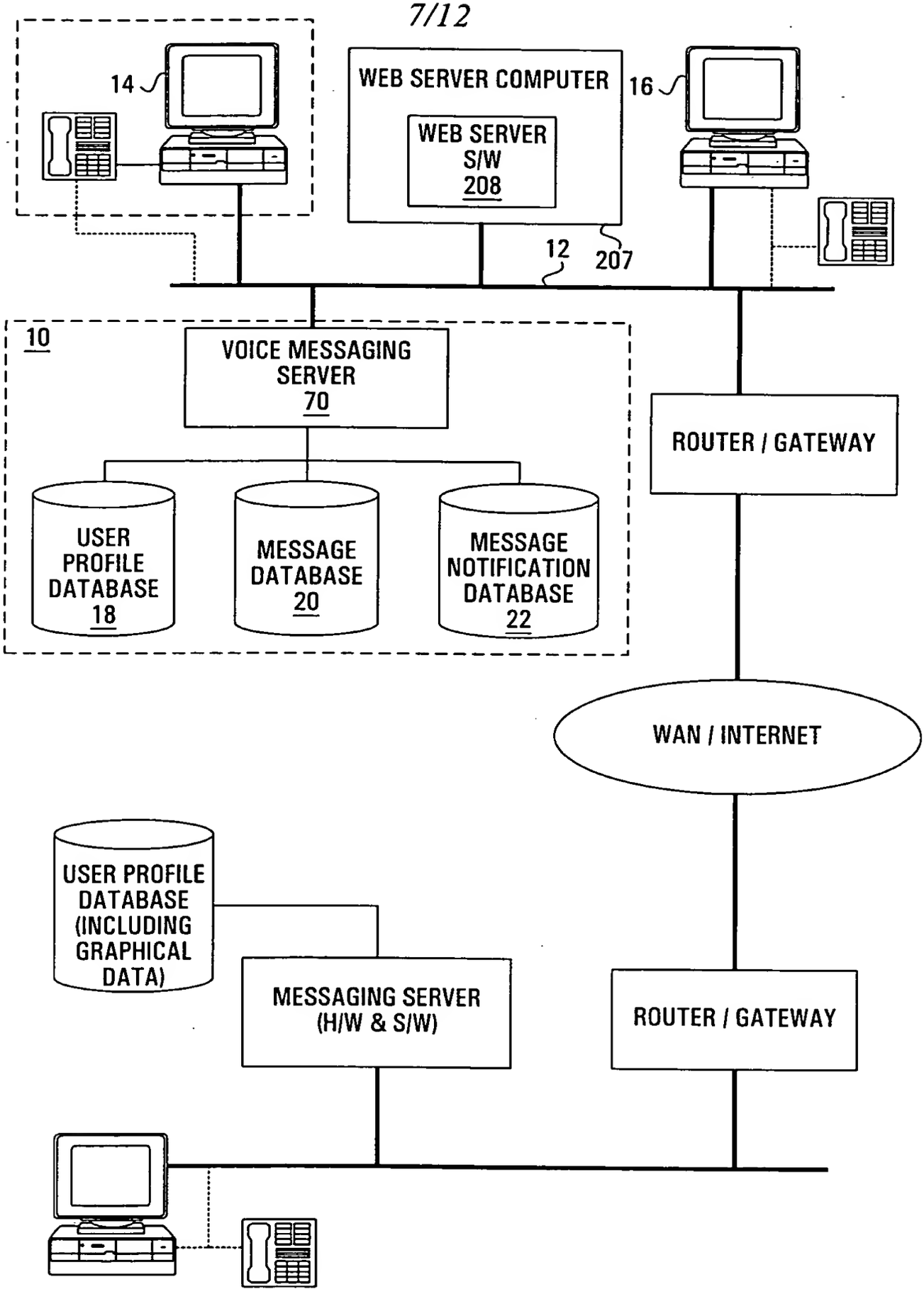
14
WEB SERVER COMPUTER
WEB SERVER S/W 208
16
12
207
10
VOICE MESSAGING SERVER 70
ROUTER / GATEWAY
USER PROFILE DATABASE 18
MESSAGE DATABASE 20
MESSAGE NOTIFICATION DATABASE 22
WAN / INTERNET
USER PROFILE DATABASE (INCLUDING GRAPHICAL DATA)
MESSAGING SERVER (H/W & S/W)
ROUTER / GATEWAY

FIG. 10

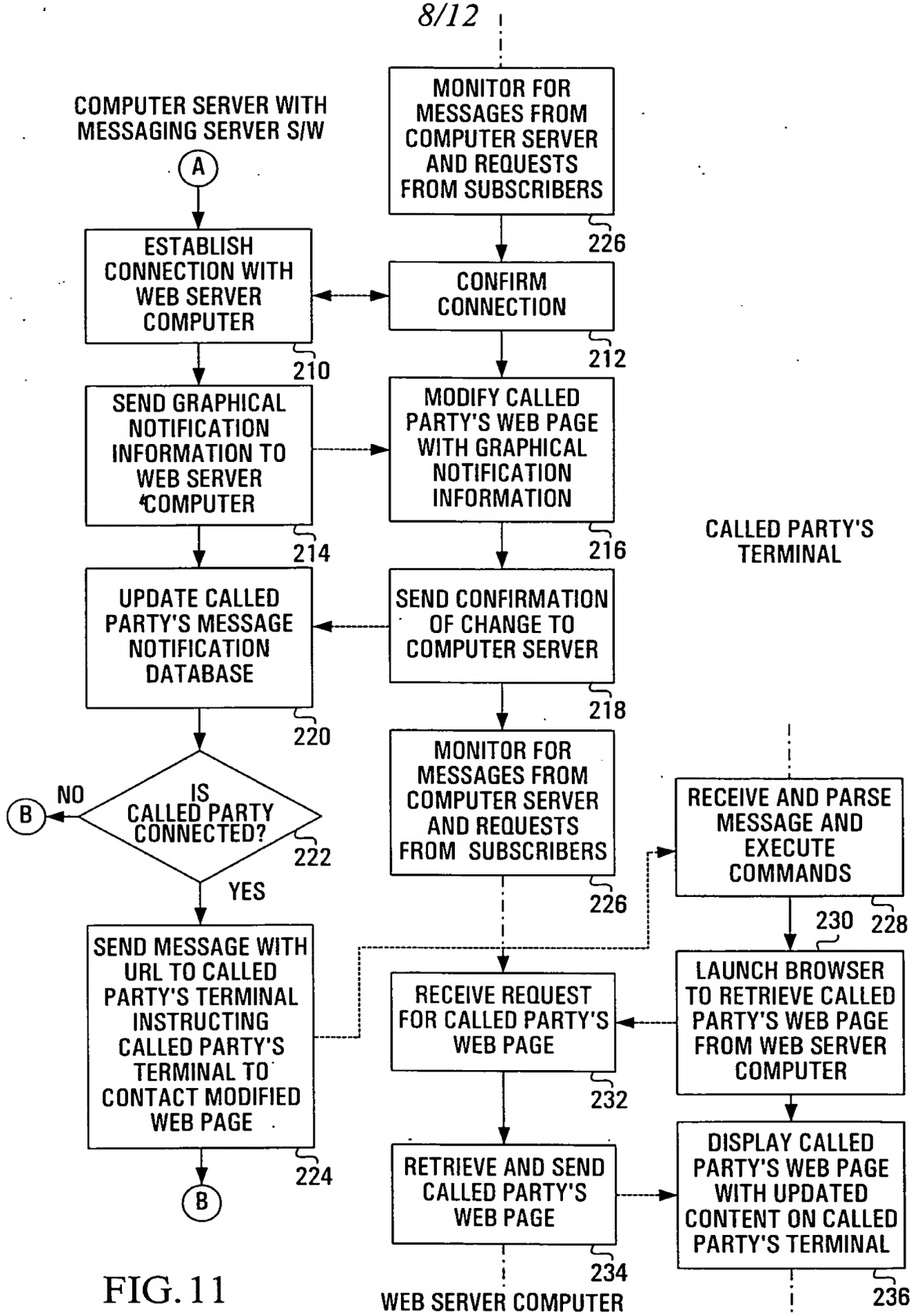
COMPUTER SERVER WITH MESSAGING SERVER S/W
A
ESTABLISH CONNECTION WITH WEB SERVER COMPUTER
210
SEND GRAPHICAL NOTIFICATION INFORMATION TO WEB SERVER COMPUTER
214
UPDATE CALLED PARTY'S MESSAGE NOTIFICATION DATABASE
220
IS CALLED PARTY CONNECTED?
222
NO
B
YES
SEND MESSAGE WITH URL TO CALLED PARTY'S TERMINAL INSTRUCTING CALLED PARTY'S TERMINAL TO CONTACT MODIFIED WEB PAGE
224
B
MONITOR FOR MESSAGES FROM COMPUTER SERVER AND REQUESTS FROM SUBSCRIBERS
226
CONFIRM CONNECTION
212
MODIFY CALLED PARTY'S WEB PAGE WITH GRAPHICAL NOTIFICATION INFORMATION
216
SEND CONFIRMATION OF CHANGE TO COMPUTER SERVER
218
MONITOR FOR MESSAGES FROM COMPUTER SERVER AND REQUESTS FROM SUBSCRIBERS
226
RECEIVE REQUEST FOR CALLED PARTY'S WEB PAGE
232
RETRIEVE AND SEND CALLED PARTY'S WEB PAGE
234
WEB SERVER COMPUTER
CALLED PARTY'S TERMINAL
RECEIVE AND PARSE MESSAGE AND EXECUTE COMMANDS
228
230
LAUNCH BROWSER TO RETRIEVE CALLED PARTY'S WEB PAGE FROM WEB SERVER COMPUTER
DISPLAY CALLED PARTY'S WEB PAGE WITH UPDATED CONTENT ON CALLED PARTY'S TERMINAL
236

FIG. 11

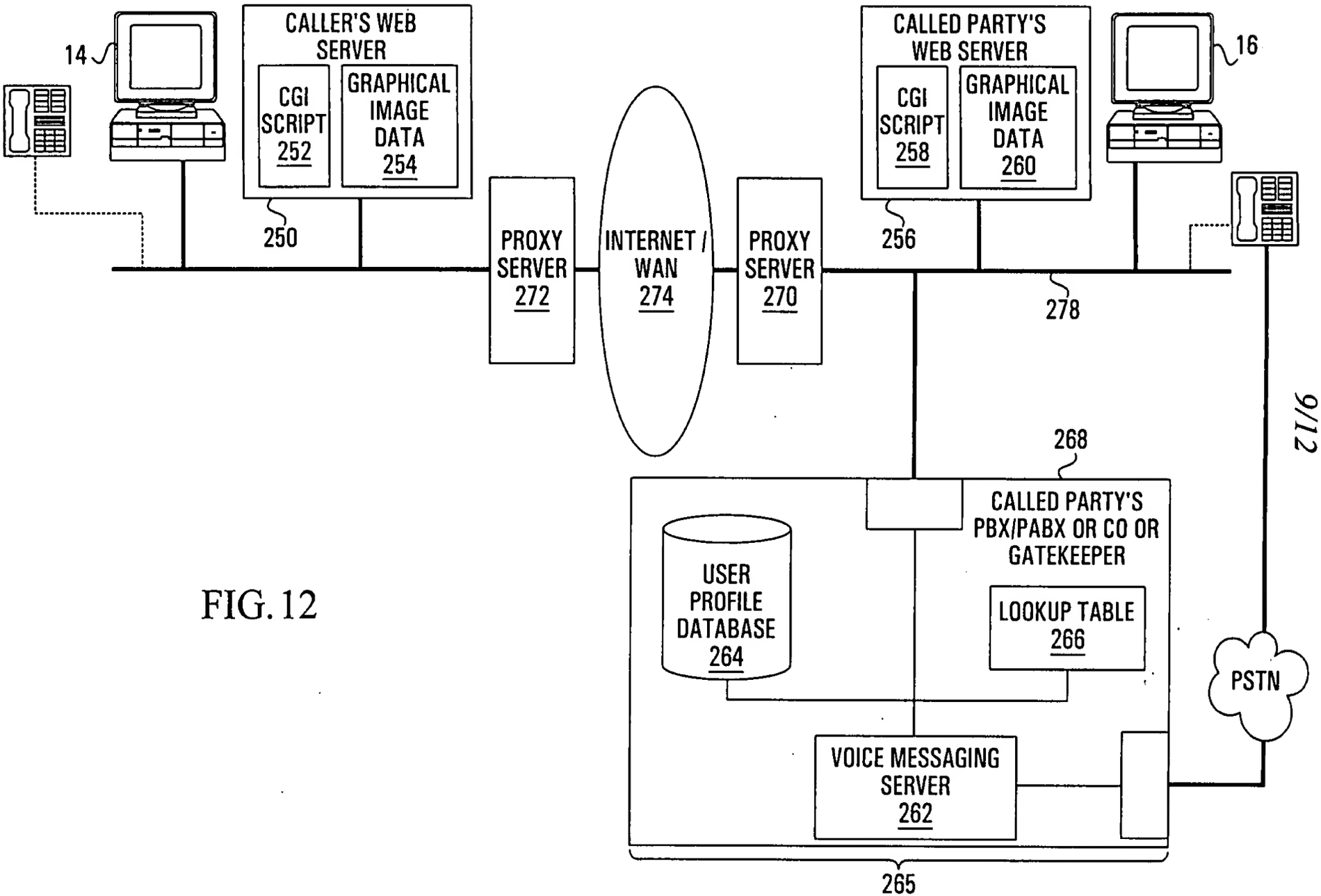
14
CALLER'S WEB SERVER
CGI SCRIPT 252
GRAPHICAL IMAGE DATA 254
250
PROXY SERVER 272
INTERNET / WAN 274
PROXY SERVER 270
CALLED PARTY'S WEB SERVER
CGI SCRIPT 258
GRAPHICAL IMAGE DATA 260
256
16
278
268
CALLED PARTY'S PBX/PABX OR CO OR GATEKEEPER
USER PROFILE DATABASE 264
LOOKUP TABLE 266
VOICE MESSAGING SERVER 262
265
PSTN

FIG. 12

TELEPHONE NUMBER[0]	IP ADDRESS A
TELEPHONE NUMBER[1]	IP ADDRESS B
...	...
TELEPHONE NUMBER[n]	IP ADDRESS X

266

FIG. 14

http://<Called Party Web Server IP address>:<port>/cgi-bin/<script file name>?<query parameters>

FIG. 15

http://<Caller Web Server IP address>:<port>/cgi-bin/<script file name>?<query parameters>

FIG. 16

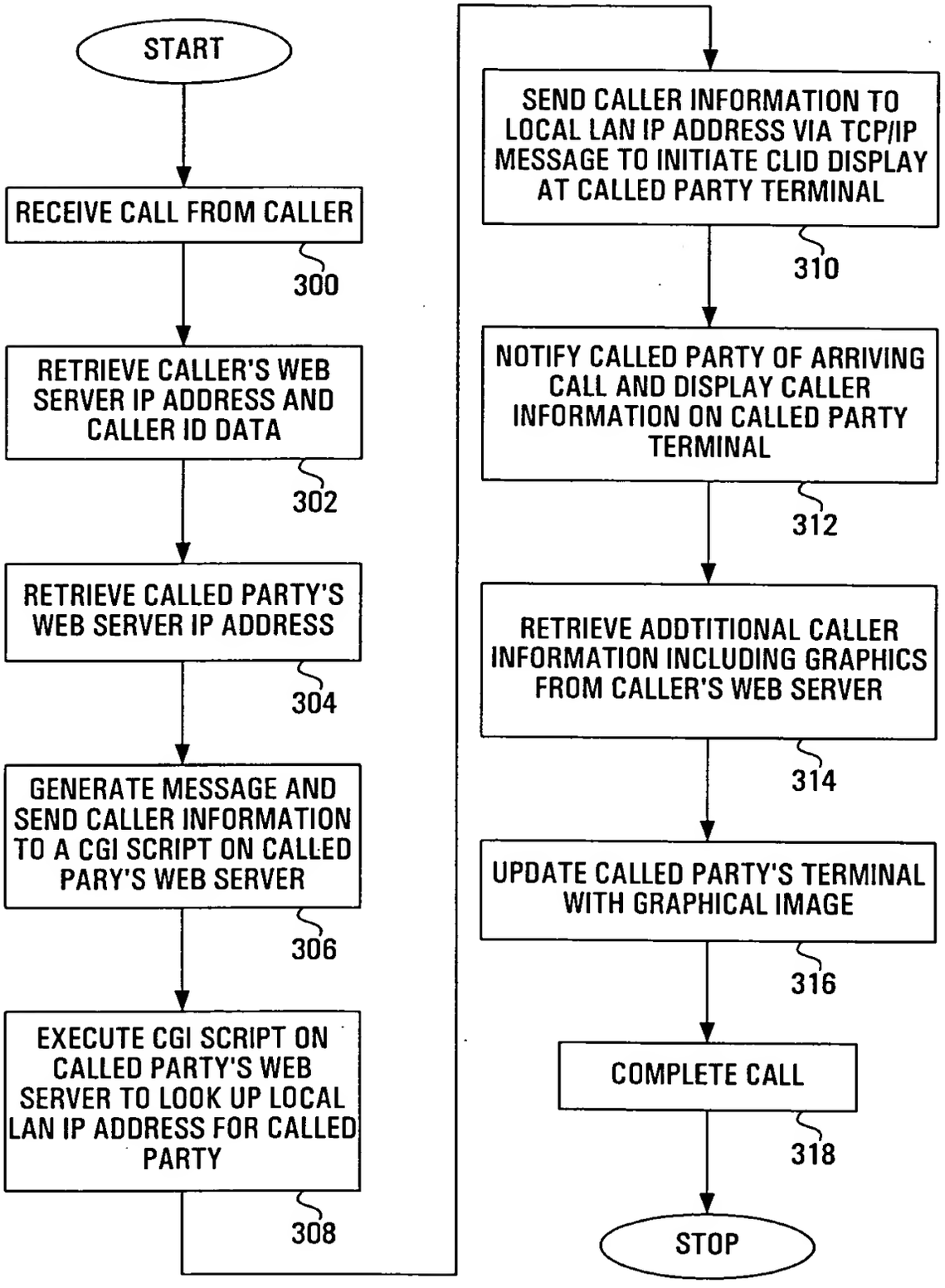
START
RECEIVE CALL FROM CALLER
300
RETRIEVE CALLER'S WEB SERVER IP ADDRESS AND CALLER ID DATA
302
RETRIEVE CALLED PARTY'S WEB SERVER IP ADDRESS
304
GENERATE MESSAGE AND SEND CALLER INFORMATION TO A CGI SCRIPT ON CALLED PARY'S WEB SERVER
306
EXECUTE CGI SCRIPT ON CALLED PARTY'S WEB SERVER TO LOOK UP LOCAL LAN IP ADDRESS FOR CALLED PARTY
308
SEND CALLER INFORMATION TO LOCAL LAN IP ADDRESS VIA TCP/IP MESSAGE TO INITIATE CLID DISPLAY AT CALLED PARTY TERMINAL
310
NOTIFY CALLED PARTY OF ARRIVING CALL AND DISPLAY CALLER INFORMATION ON CALLED PARTY TERMINAL
312
RETRIEVE ADDTITIONAL CALLER INFORMATION INCLUDING GRAPHICS FROM CALLER'S WEB SERVER
314
UPDATE CALLED PARTY'S TERMINAL WITH GRAPHICAL IMAGE
316
COMPLETE CALL
318
STOP

FIG. 13

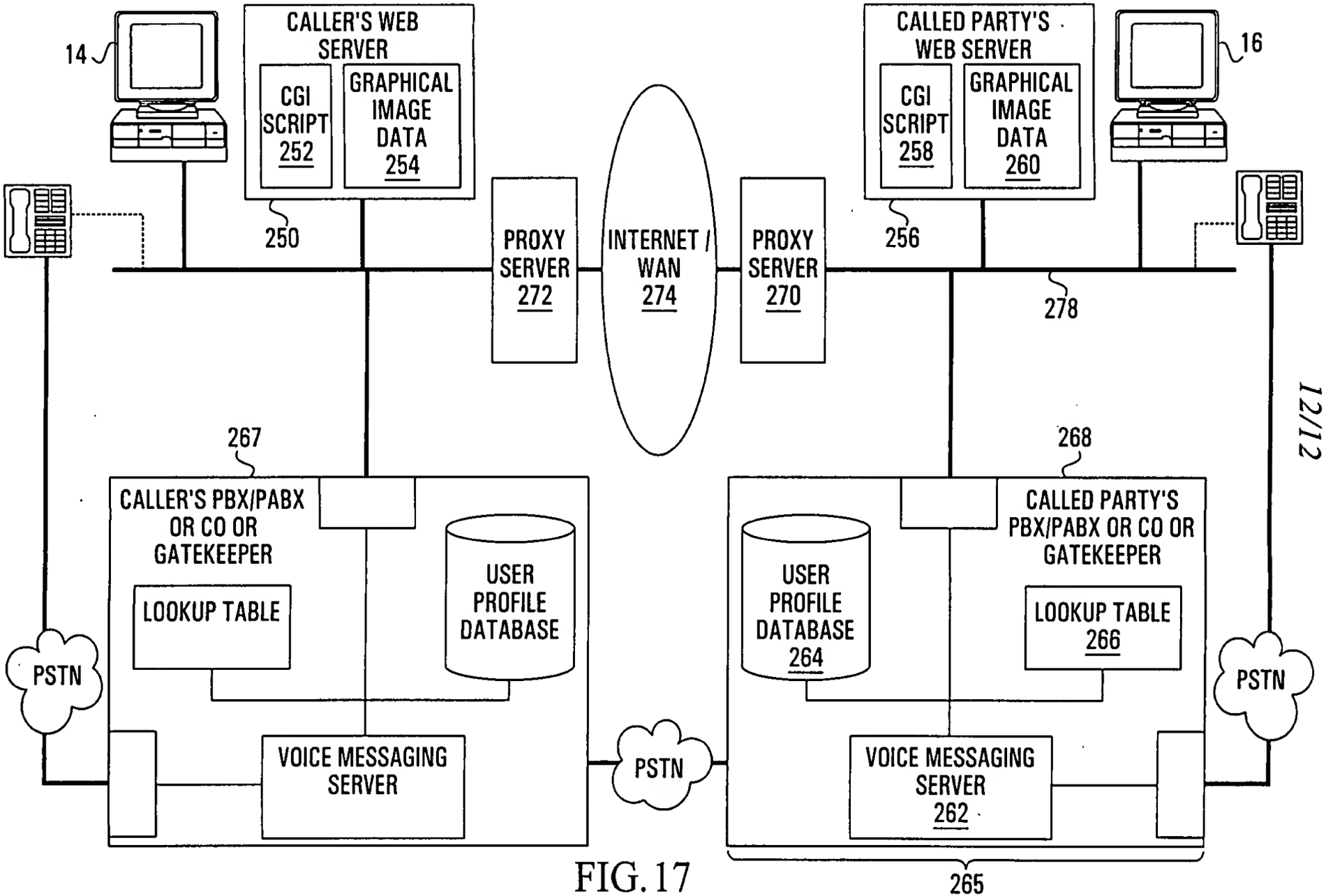
14
CALLER'S WEB SERVER
CGI SCRIPT 252
GRAPHICAL IMAGE DATA 254
250
PROXY SERVER 272
INTERNET / WAN 274
PROXY SERVER 270
CALLED PARTY'S WEB SERVER
CGI SCRIPT 258
GRAPHICAL IMAGE DATA 260
256
16
278
12/12
267
CALLER'S PBX/PABX OR CO OR GATEKEEPER
LOOKUP TABLE
USER PROFILE DATABASE
PSTN
VOICE MESSAGING SERVER
PSTN
268
USER PROFILE DATABASE 264
CALLED PARTY'S PBX/PABX OR CO OR GATEKEEPER
LOOKUP TABLE 266
PSTN
VOICE MESSAGING SERVER 262
265

FIG. 17